

A Review of *Cydia leguminana* (Lienig & Zeller, 1846) [Lepidoptera: Tortricidae] in Britain together with an Account of the Breeding of the Species

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Summary

The history of *Cydia leguminana* as a British species is considered from the time of its first mention in the literature to the present. This is followed by an account of the breeding of the species, and, finally, by a prologue for its future in these islands.

This species was first mentioned in the British literature by Stainton (1859: 245) under the name "*Stigmonota interruptana*". Apart from a description, the only information offered is "One specimen taken in Devonshire some years ago". This sketchy introduction was enlarged by Wilkinson (1859) who gave an excellent description of the imago. In addition, he prefaced some modern work, though not the most recent, by splitting the Tortricidae into two families, Tortricidae and Stigonotidae, the latter containing the genus *Stigmonota* Guenée, and corresponding with the later Eucosmidae. However, like Stainton, Wilkinson did not mention the biology of the species, and he, too, only knew of one British specimen, which he stated to have come from Devonshire, and to be in the cabinet of Mr. H. Doubleday. It is unfortunate that—either through confusion with other species (which seems unlikely, though possible, since the use of the name *interruptana* arose through misidentification) or carelessness in observing all the plant species present in localities for *C. leguminana*—reports of experiences on the Continent led Wilkinson to write that the species was there captured amongst fir-trees. Whilst this does not necessarily imply that it feeds on them, this could only have confused British entomologists, and may have been part of the cause behind the long delay in the discovery of the life-history of the species.

H. Doubleday himself (1865, p. 2) referred the species to *Stigmonota leguminana* Zeller (*teste* Lederer), with *lunulana* D.L. as a doubtful synonym. In 1866 (p. 2), he left the name the same, but altered the synonymy, removing *lunulana*, and inserting *deflexana* Herrich-Schäffer as a certain synonym.

The next step was taken when E. G. Meek reported that he had captured several specimens of "this hitherto undetermined species" in June 1866 in Epping Forest.

Seven years later, in 1873, C. G. Barrett made an attempt to correct a misunderstanding which had arisen. He wrote, "*Stigmonota interruptana* Wilk. — This is not *interruptana* H.-S., but *leguminana* Zell. Mr. Doubleday inserted this name in the supplement to his list, but omitted the reference to the displaced name. The capture of several specimens is recorded in *Ent. mon. Mag.*, 3: 163; *interruptana* H.-S. (*duplicana*

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Zett.) is a very different species, allied to *coniferana*, but larger and handsomer. I have seen no British specimen of it."

Meyrick (1895) was the first of our text-book authors to give the species its proper name. He altered the genus from *Stigmonota* to *Laspeyresia* Hübner, and used the name *leguminana*. Finally, he gave *interruptana* as a synonym, and followed Barrett by attributing it to Wilkinson, not Herrich-Schäffer. In addition to this considerable updating of the nomenclature, Meyrick made one important addition to the information given by previous British authors; he stated for the distribution, "Essex, Devon, scarce and local; Germany, Austria, N.W. Russia". There are two important points here: —

(i) Essex is added to Devon. Therefore, at least one more British specimen must have been taken since Wilkinson. Furthermore, the phrase "scarce and local" implies that, though rare, more than two specimens had been taken in Britain, and probably in more than two localities. It is possible that the British entomologists had lost interest in fir-trees as a (rather dubious) source of this species, and that search elsewhere had proven more fruitful.

(ii) A continental distribution is given, suggesting that Meyrick had read up the continental literature on the species; this may have been the source for his updating of the nomenclature.

As important as what was mentioned is what was omitted: Meyrick mentioned neither the larva nor the foodplant, thus suggesting that any further specimens taken had given no satisfactory evidence of the latter; indeed, they may have detracted from the value of fir-trees as a possible source of the species. It may, of course, just be that entomologists of the time could not imagine *C. leguminana* feeding on elm (though this is hardly less likely than fir-trees) when most of the other British species of the genus are associated with fruits, often of Papilionaceae—the very name of the species suggests a connection with this family of plants.

By 1928, Meyrick had made some changes, and had learned rather more. His comments on the distribution and biology were: "Essex, Cambridge, scarce and local; C. Europe to Siberia. Larva ochreous-grey-whitish, head reddish-brown; plate of 2 light brown, with two darker crescents: in dying bark of elm". The life-history has now been mentioned, the first account in a British text-book, a description of the larva, its feeding and rearing of the moth having first been given by Sheldon in *The Entomologist* for 1921 (pp. 228 *et seq.*). In addition, the following changes have been made to the distributional information: —

(i) The Devonshire record has been omitted: perhaps the only specimen ever taken in Devon was the original one. The absence of further records may have led Meyrick to decide that the species no longer occurred there. Alternatively, it may never have done so! The original specimen may truly

have been *C. interruptana*: it would be well worth while to check the specimen if it is still in existence.

(ii) Cambridgeshire has been added to the list. This probably refers to Wicken Fen, where Lord Walsingham took five specimens in 1869, and where the species was rediscovered in 1915. Subsequently, it was also found in Chatteris. This is an important change, since Wicken Fen was to become a major source for the species, as well as for many other rarities, in the present century.

Wicken Fen seems to have become the main refuge of the species: it was recorded there on a fairly regular basis and in reasonable numbers until 1921, when it was lost for some time. However, it was rediscovered in the same place in 1970, and has been seen there in reasonable numbers from then until 1975.

On 29.ii.1976, I visited Wicken Fen in the company of Col. Emmet, he having previously discovered that the row of pollarded elms which was the abode of *C. leguminana* had been cut down. Unfortunately, these had been growing on the land of a neighbouring farmer, so had not enjoyed the protection of the National Trust, as does the Fen itself. Fortunately, the fallen trees had not yet been carted away, so we were able to cut off pieces of bark in the hope of obtaining *C. leguminana*. There was no clear external evidence of the presence of the species, but bolls on the trunks were often found to have contained a larva. (Any larvae present had presumably pupated by now, since none was seen; this would accord with the time of pupation, deducible from the larval period given by Meyrick (1928).)

The pieces of wood thus obtained were taken away, and kept indoors. Nothing seemed to happen, and I was beginning to despair when a male *C. leguminana* emerged on 11.iv.1976. Subsequently, on 12.v.1976, a female emerged from the wood kept by Col. Emmet. Neither of us succeeded in producing any further specimens. Examination of the wood after emergence did not indicate that the site of pupation was significantly differentiated from the larval feeding cavity. The pupal case was of the same appearance as those of other members of the genus, and was extruded from the bark on emergence of the imago.

It remains to be seen whether the species has now been lost to Wicken; this does seem possible. However, it is a species which has occasional periods of scarcity, yet still survives: if it suffers a population decline, or has to move to new trees, it may take longer to re-establish itself in its former numbers than do many other species. Clearly, this will not be known for some time, but, meanwhile, it is important that a close watch should be kept for the insect: any other localities in Britain (if any such there be) should be protected. The combination of the reliance of the species on old elms, and the preference of the beetles which carry Dutch Elm Disease for the same, can only place the species in some jeopardy, and the future for it would appear bleak. The only hope is that, by a

careful monitoring of any still existing localities, the species might be kept going until such time as more old elms are available to support it once more in its former state. If such can be done, the future may, indeed, be much brighter than it would at present appear.

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BEHAVIOUR OF *LYCIA LAPPONARIA* (BOISDUVAL) IN SUNSHINE. — Spring lepidoptera were at least three weeks late in Inverness-shire in 1978, so that on 2nd May Mr. Richard Fairclough and I found over a dozen males and twenty females of *Lycia lapponaria* on a fence which crossed a growth of bog myrtle near Loch Laggan. The time was noon to 1 p.m.; there was brilliant sunshine in a cloudless sky, but a bitter north east wind. With few exceptions the males were resting torpidly low down on the shady side of the posts, though one paired couple was found in sunshine. The females, on the other hand, mostly apparently newly emerged, were all on the sunny side and crawling slowly upwards. Many had reached the flat, lichen covered, tops of the posts, where they sat in full sun, propped on their forelegs and with antennae extended, as if praying to the sun-god. Many of the males appeared to be also newly emerged but showed no sign of a similar need for warmth. Three days later in a similar locality, with probably a higher air temperature but heavy cloud and no sunshine, we could find only three males and no females. — R. F. BRETHERTON, Folly Hill, Birtley Green, Bramley, Guildford, GU5 0LE.